

1969 AFRICAN CULTURES N. AFRICA

AFRICAN FIELDNOTES 1969
 N. AFRICA, E. AFRICA TO ANGOLA -70

M-1 Morocco: Imouzzir du-Kandar (40 Km S. Fez) 21-X-69

About six juveniles under stones in scattered oaks on rocky, limestone hill. Webs quite abundant, esp. between matted oak leaves between rocks. Appear to be several spp by evidence of gallery size. Recent rain and cold weather reduced embiid surface activity.

(Late in day embiid webs also seen under stones in open fields west of Agrou) no culture

M-2 Morocco: 10 km. W. TOUFLIAT, about 80 mi E. of Marrakech
24-X-69

In western foothills of Grand Atlas. Juniper-oak zone. Embiids under red sandstones in areas plowed on slopes amongst small trees and larger rocks. Rather rare, small sp. About 8 cultured. Recent rain, fresh silk; one embiid per gallery.

M-3 Morocco: about 30 mi. E. of Ouarzazate
24-X-69

In eastern foothills of Grand Atlas. Barren hills, small stream valley. Small embiids under stones in village area. Recent rain, fresh silk, one embiid per gallery. Very small species. One seemed penultimate ♂.

M-4 Morocco: 10 mi. N. TAZENAKATE^H? (TIZI-N-BACHKOU^M)
25-X-69

In rocky desert canyon with small brook. No large shrubs except along streams. New rains, soil damp. Under stones at edge of road, but most common in matted leaves beneath oleander. No adults some 2nd instar

M-5 Morocco: 206 Km N.E Agadir, 7 mi E. of Taliouine 25-X-69
Under fig trees in arid valley of eastern Atlas foothills. Photos of sinuous strata, terraced agriculture. Embiids in matted leaves. Omit - no embiids in culture

M-6 Morocco: Tafingoult. 25-X-69 *Embia lecerfi* Ross
Embiids common in matted leaves, esp. Eucalyptus along shaded side of small stream. Small species in early stages of development.

1 male mit II-21-70

M-7 A-B MOROCCO: AGADIR 26-X-69 Embia algerica Navas
Embiids very common in matted leaves, esp Aracia, in shade
of small trees. Early stages only except for 1 large black
adult ♀ Embia. Also associated with small stones representing
rubble of earthquake-leveled houses. 1st rains have
fallen

M-8 MOROCCO: 30 KM. S. TAMANAR 26-X-69
Very small sp under stones between patches of plowed
ground under trees resembling oaks (which goats like
to climb). Recent rain. On mesas inland from
sea about 1000' elev. When I photographed
mating tenebrionids. appears to be algerica

A-1 ALGERIA: 23 KM. N. MEDEA 29-X-69
Embiids common under stones in side cyn. of large gorge
at north side of mountains, low altitude a short
distance up the grade. Flat shale on olive leaf litter.
One embiid per gallery, torpid due to heavy rain and
low temperature. Recent silk. Embiids seem to be
half grown, banded thorax. May be lucasi or a relative.
Maybe 2 spp.

A-2 ALGERIA: 5 KM. N. BOGHARI 29-X-69 630 M
Embiids under stones in completely open landscape. Low,
rock-studded knolls between plowed grain fields. Large
stratified ridge $\frac{1}{4}$ mi to east. Very wet after exceptional
rains. Mono-colourous brown, half grown nymphs. One
embiid per short, fresh web. Seldom more than one
per stone. Quiet due to cold and dampness

A-3 ALGERIA: BOGHAR, 985 M 29-X-69 E. lucasi
Prob same sp. as A-2, same conditions.
Higher altitude next to pine forests. A military
base at east entrance of pass to Alger. May
explain Lucas' collecting here.

A-4 ALGERIA: 5 Km. S. BOU-SAADA 560 M X-29-69

Barren ridge base (N.E. face) under stones esp. where soil is deeper. Perhaps 2 sp. one with teratembiid-like galleries, the other obviously Embia. Unlike Bogari lots, many embryos in single sections of galleries, some ♂ antepenultimate. Recent very heavy rain.

A-5 ALGERIA: 31 KM S. MICHELET (NOW AIN EL HAMMAN) 1500 M +- (NEAREST VILLAGE AIN-ZEBDA) X-30-69

Scrubby bush area in steep mountainous area. Low oaks and cistia shrubs (waist-high) Embiids under stones on east exposure large sp. more than half grown May also be a small sp. Embia n. sp. truncate 10LP

T-1 TUNISIA: UTIQUE (S. OF BIZERTE) XI-1

Old Roman ruins, numerous stones on grassy and weedy low hill. Embiids very common

T-2 TUNISIA: SALAMBO (Carthage) XI-2

On mossy rocks in excavated pit of Punic ruin in residential district. Few individuals

T-3 TUNISIA: JEFNA (W. OF MATEUR) XI-3

Under stones on low bushy knoll. Very common

T-4 TUNISIA: 4 KM. E. SEDJENANE XI-3

Under stones in cork oak forest. Fair number half grown Embia. Also may be a small species. {ramburi + n. sp.}

T-5 TUNISIA: TABARKA XI-4

Under stones and in dry Cleome Eucalyptus leaves under stones in deep green grass on island opposite town Had lighthouse atop old castle. Numerous. Half grown. Adult ♂ I-1-70 Egg in ball-like mass I-26-70

T-6 TUNISIA: NR AIN DRAHAM XI-4 700M

Under stones in pasture near cork oak forest high in mountains. Very wet Adult ♂ I-70 lot notes I-26-70 L. ramburi

T-7 TUNISIA: DOUGGA (= THUGGA) XI-5 E. ramburi
Under stones in old olive grove in old Roman ruin
Very wet. Embiids small, rare.

T-8 TUNISIA: 10 km N.E MAKTAR XI-5 E. ramburi
Under stones in Roman ruin in open, treeless
country. Next to stream. Seems to be small species
all uniform in size, 1 per gallery. Recent rain
♂ during XII-15-I-15, 1st instar I-26-70

T-9 A-B TUNISIA: 5 km SW GAFSA XI-6 E. birai
Open desert flats. Embiids in matted leaves beneath
low spiny bushes on sandy hillocks about 3' high. Most
bushes are succulent. Webs very large. Embiids large $\frac{5}{8}$ "
but perhaps only half grown. Must be birai
Adults during XII-15 I-15
1st instar 26-I-70

NORTH AFRICAN TYPE LOCALITIES

MOROCCO

- Jeng - Jina E. marocana Ross
Larache E. larachensis Ross
Agadir E. algerica Navas
Tafingoult, Goundafa 1500-1600 m. E. lecerfi Ross

ALGERIA

- Boghar, Medeah Plateau (S. of Alger) { E. mauritanica Lucas
E. lucasi Ross
La Guetna (near Mascara) E. attenuata Ross
Ain Oulmen (may be Oulmene, S. of Ain Beida) E. lesnei Ross
Biskra E. contorta Ross
Oulad Messlem E. silvestrii Davis

TUNISIA

- Maknassy E. sinuosa Ross
Gafsa E. biroii Krauss

LIBYA

- Homs variety of mauritanica

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N. AFRICA, E. AFRICA TO ANGOLA - 70

EAST AFRICAN CULTURES 1969

K-1 KENYA: OLORGESAILLE XI-20-69
 1 adult (♀) sifted from leaf litter beneath low shrubs
 recent rains GNATHEMBIA at site

K-2 KENYA: S.W. edge of Nairobi, near Karen XI-21
 2-3 GNATHEMBIA under stones on open flats, almost
 desert. Very rare. Recent rains.

K-3 KENYA: Escarpment crest 2 mi N.W. of Nairobi
 (just before drop into rift valley) XI-23
 Mountain forest with scattered conifers. Possibly 2 spp.
 teratembiids under bark flakes and lichens of various
 trees. Possibly 2 spp.

K-4 KENYA: 10 MI. E. NAROK XI-23
 Rocky ledge with dense scrubby trees on shaded
 East face. Region otherwise arid savanna + scrub.
 Teratembiid in lichens on dead limbs and rock
 surface. good arid incl 1 adult ♂.

T-1 TANGANYIKA: Seronera XI-24
 1 adult ♀ or ♂ bl. Dihydr. running on Mike's arm.
 Must have come out of dead limbs pulled into camp
 for fire. limbs were on damp ground.

T-2 TANZANIA: Park Hwy. on rim of Ngorongoro Crater XI-25
 Numerous Teratembiids in soft bark of mtn. forest
 trees.

T-3 TANZANIA: N. end floor of Ngorongoro Crater XI-25
Hoplitembia under lava rocks on barren, grassy
 hill. Rare, only 1 juv. embiid per gallery.
 Valley leads down into hole in soil, galleries radiate
 into dry grass at stone edge. Recent rain.

T-4 TANZANIA: 10 MI. N.W. OLDUVAI XI-25

Hoplitambria under stones beneath large acacias near upper drainage of the gorge. Very dry but first rains threatening. Embriids very common, adults young and eggs. Large culture

K-5 KENYA: THIKA XII-4-69

Teratombiid common in bark flakes of large jungle trees bordering large stream below waterfall

K-6 Same place

Scelambria adult ♀ and ♀ nymph in bark crevices of shade trees in garden of hotel at Chona Falls. Only 3 colonies seen. Could this be introduced?

K-7 KENYA: SAMBURU GAME PARK, NEAR ARCHER'S POST
XII-6-69

1 ♀ of Chirembria or Quatzenbria under stones after recent rain. Thorn acacia savanna.

K-8 KENYA: 10 MI. N. LAISAMIS 1750' XII-11-69 Chirembria

Thorn bush country. Small, pale Embria? common under small stones and matted litter in shade of large fever tree. Much new dung. Galleria radiata in litter between stones. Several penult ♂?

K-9 same place

Large Chirembria under stones and in intervening leaf litter beneath low thorn trees and shrubs along dry drainage lines. Common. Galleria very large. Adult ♀s

K-10 KENYA: LAISAMIS 2000' XII-11-69

Medium sized Chirembria under stones in shade of acacia trees near and bordering stream bed. Dry, hot conditions but rain fell some days ago. Adult males common. Must fly in hot sun because two were collected on lamp spot at edge of dry stream and one came into flight trap

K-11 Same place Chirembria

Small Embria? - same as K-8, same ecology. Several adult, pale ♂♂ collected.

K-12 KENYA: MARSABIT (CAMP SITE) 4200'
Mountain forest trees in misty zone. Teratembids
common in bark flakes.

K-13 Same region but at rim of crater of Lake Paradise
Some species, some ecology but forest damper
and denser.

K-14 KENYA: 10 MI. S.W. WAMBA 3800'
1 ♀ Onathembis at edge of large stone in dense
thorn bush scrub. Numerous lava rocks but embiid
signs very scarce.

K-15 KENYA: LOKULOKO 4800' (near S. base of Marsabit
crater slope)

Very large Chivembis common under stones in
cleared, grazed flat near Samburu villages. Large
adult males present. Good culture. Several adult
♀s secured.

K-16 KENYA: NARO-MORO, "COUNTRY LIFE" 6100'
XII-25-69

Terat in bark flakes of small native trees in garden
Not noticed in wild bush

K-17 KENYA: W SLOPE MT KENYA 8000' XII-26-69
Terat in bark flakes of large Podocarpus trees
in Mtn. forest.

K-18 KENYA: KITANI LODGE, TSAVO, PARK 2600' STOP 86
XII-30-69 NATL.

Spiostethi (?) under lava rocks piled beneath
Acacia. Webs radiate in leaf litter and into soil
beneath rocks early nymphs and $\frac{1}{2}$ grown cultured
about 10

K-19 KENYA: ABOUT ~~20~~¹⁰ MI. N. KALIFI, 100' XII-31-69

Fine terat in bark flakes of rotten lumber
on leaf litter in dry, native forest. Silks blue-
white. Some females and spermathecal males.

21 DEC 69

STOP 78 Karen, 5600'

Collected mainly around garden
& in meadow both by hand
netting and slight trapping.
Did not separate material.

STOP 78 KENYA
Karen
Karen, 5600'
XII-21-1969,
MG Erwin, ESR. 13

- 400

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T-5 TANZANIA: AMANI I-7-70 3000'

Mountain forest at Malawi Research Institute. Rhagothrips
vosseleri common in tree bark, rough. Webs gray
with fine pink powder. Not conspicuous from a distance.
Occupied by 1 ♂ which apparently laid eggs weeks ago.
These eggs (♀-webs surrounded by scattered blue-white
small rocks each occupied by 1 2nd instar nymph.
Small culture made of 2 ♂ and about 10 nymphs.

T-6 TANZANIA: 16 MI. N. MWANGA 2600' (near Mochu junction)
I-8-70

Shist rocks in tangled jungle at base of rocky
ridge. Rare nymphs. Pambolus brachy, euphorbia
etc. recent rain after long drought possibly 2 spp.

T-7 TANZANIA: 5 MI. SE. NGARE NANYUKI 4500' I-9-70

Volcanic kopjes on black ash soil. systell nymphs
1/3 grown under one stone. Otherwise scarce. Recent heavy
rain after long drought

T-8 TANZANIA: 13 MI. W. NGARE NANYUKI 5000' I-10-70

Acacia savanna flat grassland Cephalonomia rare under
lava rocks at edge of draw. Heavy rain a long
ago. Soil: black ash. 1 ♂ adult in burrow stone 3'
down. Small 3rd instar cultured. Near Amala-Carolin
road junction.

K-20 KENYA: 23 MI. E. NAMANGA, AMBOSELI 3700' I-10-70

Acacia scrub along base of rocky ridge crystalline
rocks with calcareous mixture. Recent rain after long
drought. Soil granite type. Old galleries fairly
common under large rocks. 1 Cephalonomia ♀ collected
by digging out burrow. Same place as 1967
encountered.

T-9 TANZANIA: 1 Mi W. Katesh 25-I-70
 Scattered schist rocks on low ridge in Acacia scrub.
 Numerous recent volcanoes in vicinity at base of Mt.
 Hanang. Very rare. 1 adult ♀ with eggs mixed in
 web at edge of stone. 1 juv ♂ (?) also in another
 web. Recent rain. Hoplitembia hanangae n. sp.
 Eggs hatched I-29-70

T-10 TANZANIA: 20 MI. S.W. ITIGI, 4300' I-28-70
 Teratembid under lichens on small rough saplings in
 termite mound thicket in Brachystegia woodland.
 Recent rain Adult ♀s only about 6

T-11 Same place
 Or + Bl Dihydroecus ♀ under loose bark of limb
 on ground. With egg mass. One egg mass in
 other similar place but without ♀ also in tube

T-12 TANZANIA: 42 MI. NW Rungwa 4700' I-28-70
 Same teratembid as T-10 similar situation near but
 granite outcropping.

T-13 TANZANIA: 30 MI. N.W. Rungwa 4500' I-28-70
 High slope with granite outcropping in B. woodland
 Or + Bl Dihyb. forming large web in rock
 crevice. Adult ♀ with eggs and many 1st instar crowded
 around her. eggs in ball not attached to substrate
 Other ♀ in alcohol

T-14 TANZANIA: 21 MI. NE MBEYA, 7000', I-29-70
 Montane forest patch in ravine on high grassy ridge
 Embiids in dead bark of branches and vines of small
 tree. Very wet and windy. May be terat or secl.
 Web naked. 1 or 2 ♀ only

Z-1 ~~T-15~~ ZAMBIA / TANZANIA: 11 MI. N.W. MBALA (ABERCORN) 4700' 31-I-70
(Fischer's Research Residences)
Brachystegia woodland after heavy rains
Small teratobid undersurface + outer flakes of bark of dead tree

Z-2 ~~T-16~~ same place.
2♀ Dihyb (or + bl) 1 with eggs. One in dead fungus on tree trunk another in loose bark of dead branch

Z-3 ~~T-17~~ same place
A-D
Envijsa ♀ + egg mass (1♀ per tube) ^{each} in silk mass binding leaves together. Several photographed. Usually in dead leaves matted against green. A few on dead sprigs and attached dead leaves. Usually about 15" above ground. Fire burnt part of area but didn't harm embryos which probably spent dry season underground. No silk connections to ground?

Z-4 ZAMBIA: 21 Mi W. Mbala 3500' 1-II-70
Rocky ledge on escarpment at S. end of the Tanganyika. Brachystegia woods, recent rain. Only or + bl Dihyb. colonies on side of rocks. at base and in crevices. 2-3rd instar only under sheet webs. No fungus about 10 cultured from 2 colonies.

Z-5 ZAMBIA: 5 Mi S. Sanga Hill 5700' 1-II-70
Rocky ridge in Brachystegia. Wet. Old ♀ nest underside of singed log on ground. Pale ferruginous 3rd (or 2nd) instar under burned lichens. 1 nymph per gallery. Beginning to scatter. May be Dinembinae. About 10 nymphs

Z-6 Same place
1♀ Envijsa under edge of log on damp ground in semi-cleared old field. Leaves matted with silk up side of log. Soil tunnel headed straight down beneath.
♂ collected nearby in 1967 (in nymph stage)

Z-7 Same place
3♀ or + bl Dihyb. in branch butts of cut-off small trees in above situation. No eggs seen. May be distinct from Mbala species.

Z-8 ZAMBIA: S. END LK TANGANYIKA II-1-70
Or + bl. Dihyb in branch + stump butts in open Brachystegia wood above shore of lake

Z-9 ZAMBIA: KASAMA 4400' II-2-70
Scutellaria + possible other spp under bark flakes of trees in city park — native trees with undergrowth cut to ground level. Very wet. Several ♀ Scel with eggs + 1st instar

Z-10 Same place and situation
Or + bl. Dihyb ♀ + eggs. Possible other species

Z-11 ZAMBIA: 3 MI. S. SERENJE 4600' 3-II-70
Rocky ridge in low grade Brachystegia. Scel. Terat + OR + BL in bark flakes of fallen trees and branch butts.

(KABWE)
Z-12 ZAMBIA: 23 MI. N. BROKEN HILL 3800' 3-II-70
Brachystegia on sandy soil. Many trees felled by wind
Dinambiinae ♀ and about 50 babies in branch butt formerly high in tree before it fell. Naked silk web on bark surface led to retreat beneath bark.

Z-13 ZAMBIA: 10 MI. N. LIVINGSTONE 3200' 5-II-70
Brachystegia woodland on sandy soil. Dinambiinae ♀ and numerous swarming ^{1st +} 2nd instar nymphs under dry bark of hard 6" limb 4' up tree trunk. Naked silk galleries appearing out of surrounding bark cracks. Food must be outer, gray, weathered surface of bark.

RHODESIA

AFRICAN FIELDNOTES 1969
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R-1 37 MI. N. WANKIE II-10-70
Embria ♀♀ + young nymphs under reddish stones on east slope of low hills covered with *Brachystegia* woodland and high grass. Recent rain.

R-2 18 MI. S.W. WANKIE 2300' II-10-70
Embria early instars under edge of flat stone on ledge-like ridge covered with dense scrub and large trees. Rather dry

R-3 Mandava Dam Wankie Natl. Park 3000' II-11-70
 Few young *Embria* under calcareous stones in open, acacia scrub. Very dry

R-4 Matopos Hills 3900' II-15-70
 (Private land of friend of Dr Pinhey)
 Very dense woods in narrow canyon formed by high granite intrusions. 1 ♀ and brood of early instars found in matted leaves under granite stones in deep shade. Recent rain. 1 ♂ collected

R-5 9 MI S.W. of Bulawayo 4000' II-22-70
 ♀ *Embria* 1st instar brood and eggs under volcanic stones on low, densely-wooded hills. Fawn matted leaves between stones and sides of rocks. Rather common, Recent rain.

R-6 Same place, duplicate culture

ANGOLA 1970

A-1 Just S. of CHIBEMBA 3600' III-11-70
 Metamorphic scapes and rock hills in dense woodland
 (not granite) Solenobia nymphs in galleries radiating from
 exfoliating slabs in shade. Bushman artifacts near
 shelter and in bushes. Recent heavy rain

A-2 18 MI. NE SA DA BANDEIRA III-12-70
 Brachyotegia woodland on rolling hills. Many trees
 recently cut by Africans. Possibly 3 spp. Recent rain.
 (a) Multicolored Aspidembia pernick 07 and several ♀♀
 in bark crevices of dead tree.
 (b) One lot of early instar brood in bark butt of
 dead limb of large cut down tree
 (c) 1 pale nymph in leaf litter and lichens beneath log.

A-3 5 MI. N. NEGOLA 5100' III-12-70
 Good Brachyotegia woodland with scattered, felled trees
 Many 3rd instar, pale nymphs under hard, brittle
 bark flakes of dead tree with loose bark. Scattered
 about old colony of rather large galleries on underside
 of elevated, horizontal trunk.

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Notes for Angola paper

Oligotoma saundersii (Westwood)

Dundo at light (ANG. 11209, 3144, 3565, 3075.5, 11244,
3993-11, 3115.15 3398.14 3530.25) X-1956, VI-1953, IV-1954
21-VII-53, XII-I, II-III-51

Scelermbia vilhenai (Ross)

Dundo, gallery forest of Rio Combuacala 25 (VIII - 60
(A. de B. Machado) ♂ ANG 15372.24

Same as above but mixed with Machobembia angolica ♀♀ + JUV.
2 - VIII - 60 ANG 15903.24

A.29 Pale embryos under lichens on upper branches of
freshly felled Mussungwa tree COMBRETUM SP.
on Estrada da Balanca, Cuanda Forest type called
TSHISUNGWA by CHOKWA 5 km W. Dundo III-24-70

BOTSWANA:

STOP B-1

28 MI. N.E. FRANCISTOWN, 3600', II-23-70 (E.S. ROSS)

Flatland with dense, low woodland - mostly *Mopane* in green leaf, knee-high dry grass. Had good rains 1-2 months ago but now dry. Soil: packed silt with sprinkling of Kalahari reddish sand. Very dry; clear skies. Collected under logs, dung and at black light. [about 500 insects]

STOP B-2

AFRICAN FIELDNOTES 1969
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N.AFRICA, E. AFRICA TO ANGOLA